

REMARKS:Claim 8

Regarding claim 8, Applicant acknowledges and appreciates Examiner's indication of allowable subject matter. Claim 8 has been rewritten to include all of the limitations of the base claim and any intervening claims.

Claims 17, 18, 27, 28

The Examiner has rejected claims 17, 18, 27 and 28 under 35 USC 112, second paragraph as being indefinite.

The Examiner is correct. Claims 17, 18, 27 and 28 have been amended to recite other limitations believed to comply with 35 USC 112. Particularly, claims 17 and 27 have been amended to claim an embodiment similar or the same as that shown in FIG. 10. Claims 18 and 28 have been amended to claim an embodiment similar or the same as that shown in FIG. 11.

Claims 1-7, 9-31

The Examiner has rejected claims 1-7 and 9-31 under 35 USC 102(e) as being unpatentable over US Patent Appl. No. 2004/0160708 to Zheng et al. (hereinafter "Zheng").

The Examiner notes in section 1 of the office action that the limitation "nanoconstricted area" has been construed to mean any part of the head provided it includes part of the pinned and free layers.

Claim 1 has been amended to further define the nanoconstricted area. Particularly, the nanoconstricted area is defined as an area having a smaller height than the immediately surrounding areas. The term "height" is defined at p. 7, line 9 as taken perpendicular to the air bearing surface. FIG. 4 of the instant application provides a good example of how the nanoconstricted area has a reduced height. The height of the structure should not be confused with the thickness of the structure.

Zheng, in contrast, fails to teach or suggest a nanoconstricted area defined by a reduced height (as opposed to thickness). .

The reduced height of the nanoconstricted area creates a high resistance, which in turn results in a greatly improved signal. Note p. 11, line 20 to p. 12, line 20. And because the height of the sensor is reduced rather than attempting to precisely control the thicknesses of the various layers, the claimed structure is much easier to fabricate.

Accordingly, reconsideration and allowance of claim 1 is respectfully requested.

Regarding claims 2-4, 13-15 and 23-25, Applicant notes that the dimensions relied on in Zheng are parallel to the ABS. However, these dimensions are typically referred to as thicknesses. Applicant most respectfully points out that the height of the structure is not the same as the thickness, "height" and "thickness" being dimensions oriented perpendicular to each other. The term "height" is defined at p. 7, line 9 of the instant application as taken perpendicular to the air bearing surface. The term "thickness" is defined as being taken perpendicular to the plane and height of the associated layer at p. 7, lines 10-11.

Claims 2-7 and 9-11 depend from claim 1, particularly as amended. By virtue of their dependence, claims 2-7 and 9-11 are also believed to be allowable over Zheng. Allowance of claims 2-7 and 9-11 is respectfully requested.

Claims 12 and 22 have been amended in a manner similar to claim 1. Accordingly, claims 12 and 22 are also believed to be allowable over Zheng.

Claims 13-21 depend from claim 1, particularly as amended. By virtue of their dependence, claims 13-21 are also believed to be allowable over Zheng. Allowance of claims 13-21 is respectfully requested.

Claims 23-31 depend from claim 1, particularly as amended. By virtue of their dependence, claims 23-31 are also believed to be allowable over Zheng. Allowance of claims 23-31 is respectfully requested.

Claims 1-3, 5-7, 9-14, 16-24, 26-31

The Examiner has rejected claims 1-3, 5-7, 9-14, 16-24, and 36-31 under 35

USC 102(a/e) as being anticipated by US Patent No. 6,462,919 to Mack et al. (hereinafter "Mack").

The same arguments presented above with respect to Zheng apply to Mack. Particularly, Mack fails to teach or suggest a nanoconstricted area defined by a reduced height (as opposed to thickness).

Accordingly, allowance of claims 1-3, 5-7, 9-14, 16-24, and 36-31 is respectfully requested.

Claims 4, 15, 25

The Examiner has rejected claims 4, 15 and 25 under 35 USC 103(a) as being unpatentable over Mack in view of Zheng.

Applicant most respectfully points out that the height of the structure is not the same as the thickness, "height" and "thickness" being dimensions oriented perpendicular to each other. The term "height" is defined at p. 7, line 9 of the instant application as taken perpendicular to the air bearing surface.

Claims 4, 15, and 25 depend from claims 1, 12 and 22 respectively, particularly as amended. By virtue of their dependence, claims 4, 15 and 25 are also believed to be allowable over Zheng. Allowance of claims 4, 15 and 25 is respectfully requested.

Claim 32

Claim 32 was not considered in the office action. Regardless, claim 32 depends from claim 1, and therefore includes the novel aspects of claim 1. Allowance of claim 32 is respectfully requested.

In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at (408) 971-2573. For payment of any additional fees due in connection with the filing of this paper, the Commissioner is authorized to charge such fees to Deposit Account No. 50-2587 (Order No. HSJ9-2003-0163US1).

Respectfully submitted,

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HIT1P034/HSJ9-2003-0163US1

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